Serial No.: 09/848,997
Group Art Unit: 2822

REMARKS

Claim Rejections - 35 USC §103

Claims 2-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levert et al. (USPN 6,407,006, hereinafter "Levert").

Levert provides an apparatus for planarizing or patterning a dielectric film on a substrate. The apparatus includes a press for applying contact pressure to an operably connected compression tool. The compression tool has a working face that is planar or patterned. A controller for regulating the position, timing and force applied by the compression tool to the dielectric film is also provided. There is also provided a support, with an optional workpiece holder for supporting the substrate and dielectric film during contact with the compression tool. Methods of using the apparatus, as well as planarized and/or patterned dielectric films are also provided. [Levert Abstract]

Smith provides a process for vaporizing at least one alkoxysilane composition; depositing the vaporized alkoxysilane composition onto a substrate; exposing the deposited alkoxysilane composition to a water vapor, and either an acid or a base vapor; and drying the exposed alkoxysilane composition, thereby forming a relatively high porosity, low dielectric constant, silicon containing polymer composition on the substrate. [Smith Abstract]

Regarding independent claim 2, Applicant has amended the previously claimed combination to include the limitations not disclosed in Levert or Smith of:

> "rotating the wafer holder to apply a first rotary motion to the semiconductor wafer thereon;
> applying mechanical pressure to the ILD layer on the semiconductor wafer having the first rotary motion using a mechanical device, the applying the mechanical pressure includes providing a second rotary motion and a traverse motion between the mechanical device and the ILD layer on the semiconductor wafer to assist in planarization" [underlining for clarity]

The support for the first and second rotary motions is in Specification page 3, lines 15-21:

> "Referring now to FIG. 2, therein is shown a side view of the system 10 in accordance with the present invention. The semiconductor wafer 14 is

> shown mounted on a rotating wafer holder 26, which rotates in the direction indicated by the arrow 22. A thermally conducting non-stick surface 28 is shown under the top plate 16 in contact with the semiconductor wafer 14. As the top plate 16 rotates in the direction indicated by the arrow 20, it traverses the semiconductor wafer 14 along the horizontal plane in the direction indicated by a pair of arrows 30."

Neither Levert nor Smith teaches or suggests rotating the wafer holder or having first and second rotary motions.

Regarding claims 3-6, these dependent claims respectively depend from independent claim 2 and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

Based on the above, it is respectfully submitted that claims 2-6 are now allowable under 35 USC §103(a) as being patentable over Levert in view of Smith.

Claims 8-14 are rejected under 35 USC §103(a) as being unpatentable over Levert et al. (USPN 6,407,006, hereinafter "Levert") in view of Oaks et al. (USPN 6,083,661, hereinafter "Oaks") and Smith et al. (USPN 6,022,812, hereinafter "Smith").

Levert has been summarized above.

Oaks discloses photodefineable cyclobutarene compositions. These polymer compositions are useful in composites, laminates, membranes, films, adhesives, coatings, and electronic applications such as multichip modules and printed circuit boards. [Oaks Abstract]

Smith has been summarized above.

Regarding independent claim 8, Applicant has amended the previously claimed combination to include the limitations not disclosed in Levert, Oaks, or Smith of:

> "rotating the wafer holder to apply <u>a first rotary motion</u> to the semiconductor wafer thereon;
>
> ...

> applying mechanical pressure to the ILD layer on the semiconductor wafer having the first rotary motion using a mechanical device to apply rotating pressure to the ILD layer in the oven, the applying the mechanical pressure includes providing a second rotary motion and a traverse motion between the mechanical device and the ILD layer on the semiconductor wafer to assist in planarization;" [underlining and deletions for clarity]

The support for the first rotary and second motions is in Specification page 3, lines 15-21, supra.

Levert, Oaks, or Smith do not teach or suggest, either singularly or in combination, rotating the wafer holder or having first and second rotary motions.

Regarding claims 9-14, these dependent claims respectively depend from independent claim 8 and are believed to be allowable since they contain all the limitations set forth in the independent claim from which they depend and claim additional unobvious combinations thereof.

Based on the above, it is respectfully submitted that claims 8-14 are now allowable under 35 USC §103(a) as being patentable over Levert in view of Oaks and Smith.

The other references cited by the Examiner showing the prior art have been considered and are not believed to disclose, teach, or suggest, either singularly or in combination, Applicants' invention as claimed.

Conclusion

In view of the above, it is submitted that the claims are in condition for allowance and reconsideration of the rejections is respectfully requested. Allowance of claims 1-6 and 8-14 at an early date is solicited.

To the extent necessary, a petition for an extension of tim under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this

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paper, including any extension of time fees, to Deposit Account No. 50-0374 and please credit any excess fees to such deposit account.

Respectfully submitted,

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